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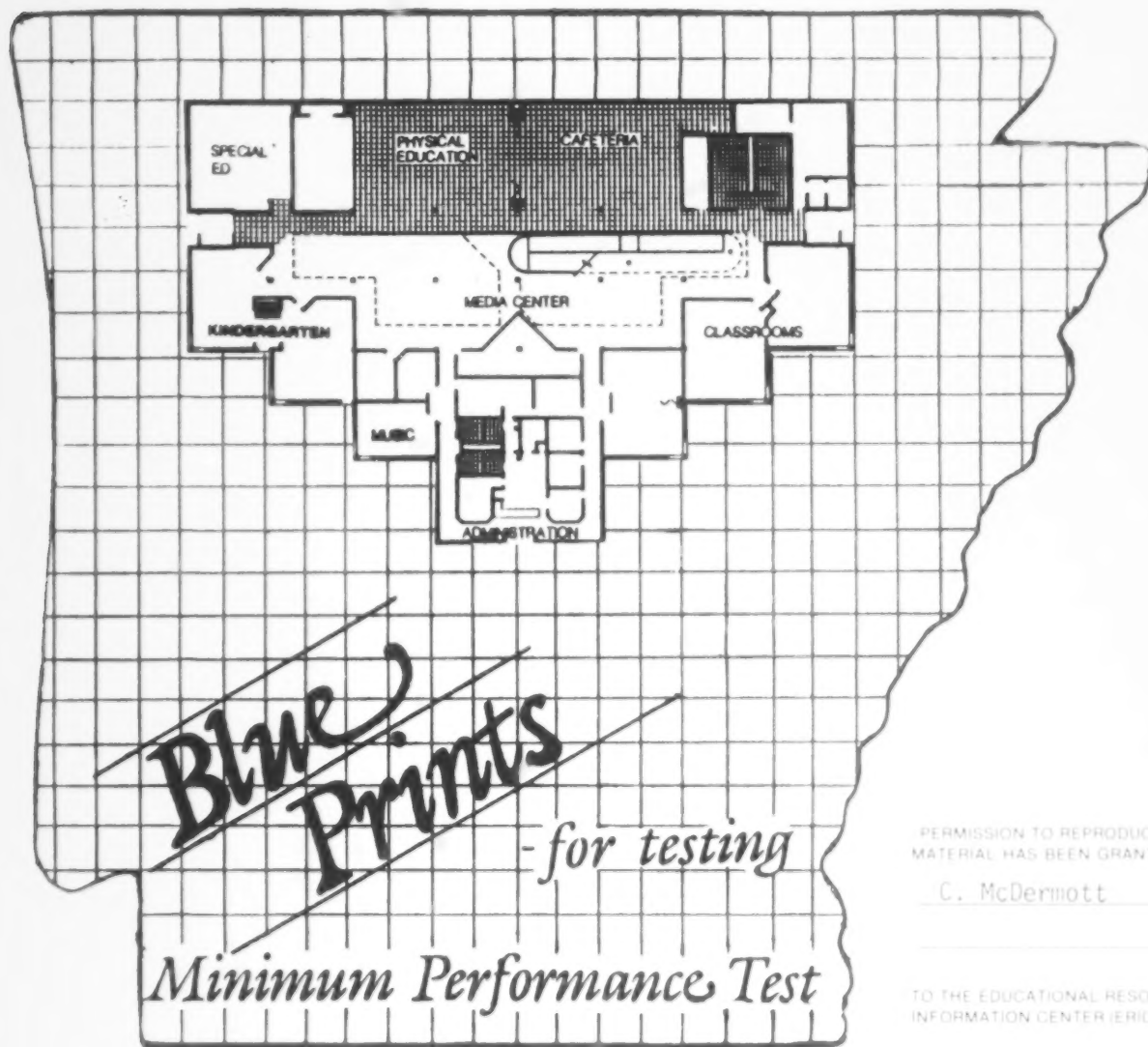
ABSTRACT

These item specifications were developed as a part of the Arkansas "Minimum Performance Testing Program" (MPT). There is one item specification for each instructional objective included in the MPT. The purpose of an item specification is to provide an overview of the general content and format of test items used to measure an instructional objective. Specifically, each item contains: (1) an objective identification number; (2) grade level; (3) subject area; (4) goal identification; (5) skill description; (6) stimulus attributes; (7) response attributes; and (8) sample items. It is suggested that teachers may use these specifications in a variety of ways. Teachers may use them as a guide in the development of evaluation instruments to check student performance, inform parents about what their child will face on the MPT, and familiarize their students with the MPT. Covered in this guide are items which test numeration, whole numbers, rational numbers, measurement, geometry, probability and statistics, and integers. (CW)

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Item Specifications

Mathematics
Grade 8

18915035

INTRODUCTION

These Item Specifications were developed by the Department of Education as part of the Arkansas Minimum Performance Testing Program (MPT). There is one Item Specification for each instructional objective included in the MPT. While all objectives are not necessarily tested every year, every objective included here may appear in the MPT.

The purpose of an Item Specification is to provide an overview of the general content and format of test items used to measure an instructional objective. Specifically, each Item Specification contains the following information:

- * *Objective Identification Number*
- * *Grade Level*
- * *Subject Area*
- * *Goal Identification*
- * *Skill Description*
- * *Stimulus Attributes (Format, Content, Directions)*
- * *Response Attributes (Format, Content, Directions)*
- * *Sample Item(s)*

The first five elements listed above are consistently labeled and defined to correspond with the Teachers' Guide and MPT materials. The Stimulus Attributes section contains information about the item stem (the question or incomplete statement that makes up the test question). Similarly, the Response Attributes section contains information about the correct answer and about possible incorrect answers. The Sample Item section provides examples of a test item or items which are similar to the items which may appear on the MPT.

These Item Specifications may be used in a variety of ways. Teachers may use them to guide them in the development of information evaluation instruments to determine whether or not students have mastered specific objectives. Teachers may also use these Item Specifications to inform parents about what their children will experience when they take the MPT. Teachers may also use these Item Specifications to familiarize students with what to expect on the MPT.

School administrators may use these Item Specifications when they communicate to the public about the MPT. The sample items may be useful in illustrating what mastery of an objective means.

It is important to understand that use of these Item Specifications does not in any way invalidate the MPT. None of the test items on these Item Specifications have appeared or will ever appear on the MPT. Using these Item Specifications in the classroom or as part of the instructional process is **NOT** teaching the test!

OBJECTIVE: 1.1

GRADE 8: MATHEMATICS

GOAL: NUMERATION

SKILL: Identify the place value of each digit in a whole number with no more than ten digits.

STIMULUS ATTRIBUTES:

- A. Format** an incomplete sentence or direct question such as:
- Type 1* In (number), what is the value of the (digit)?
 - Type 2* Which number has a (digit) in the (ones to hundred thousands) place?
 - Type 3* In (number), the digit () is in the (ones to hundred thousands) place.
 - Type 4* What digit in (number) is in the (ones to hundred thousands) place?
 - Type 5* In (number) the (digit) means:
 - Type 6* In (number), the value of (digit) is:
- B. Content**
- Type 1* number with four to ten digits
 - Type 2* digit zero to nine
 - Type 3* number with four to ten digits
 - Type 4* number with four to ten digits
 - Type 5* number with four to ten digits
 - Type 6* number with four to ten digits
- C. Directions**
- Types 1-6* N/A

RESPONSE ATTRIBUTES:

- A. Format**
- Type 1* four numbers listed vertically in order of increasing or decreasing magnitude
 - Type 2* four numbers listed vertically in order of increasing or decreasing magnitude
 - Type 3* four place value names listed vertically in random order
 - Type 4* four digits listed vertically in increasing or decreasing magnitude
 - Type 5* four place value names with the stimulus digit listed vertically in random order
 - Type 6* four numbers (spelled out) listed vertically in random order
- B. Options**
- Type 1* correct response: the value requested in the stimulus
distractors: products of the stimulus digit and different powers of ten
 - Type 2* correct response: the number requested in the stimulus
distractors: numbers with the stimulus digit in other place values
 - Type 3* correct response: the place value name requested in the stimulus
distractors: other place value names
 - Type 4* correct response: the digit requested in the stimulus
distractors: other digits from the stimulus number
 - Type 5* correct response: the place value requested in the stimulus
distractors: other place values with the stimulus digit
 - Type 6* correct response: the value of the stimulus digit spelled out
distractors: other place values with the stimulus spelled out

OBJECTIVE: 1.1 (cont.)

SAMPLE ITEM: Type 1

1. In 42,673, the value of the 2 is?

- A 20
- B 200
- C 2,000
- D 20,000

SAMPLE ITEM: Type 4

4. What digit in 972,673, is in the hundreds place?

- A 9
- B 7
- C 6
- D 3

SAMPLE ITEM: Type 2

2. Which number has a 7 in the ten thousands place?

- A 456,721
- B 781,325
- C 837,542
- D 972,673

SAMPLE ITEM: Type 5

5. In 6,388,458, the 5 means:

- A 5 tens.
- B 5 hundreds.
- C 5 thousands.
- D 5 ten thousands.

SAMPLE ITEM: Type 3

3. In 7,852,436, the digit 8 is in the _____ place.

- A hundreds
- B ten thousands
- C hundred thousands
- D millions

SAMPLE ITEM: Type 6

6. In 7,852,436, the value of 8 is:

- A eighty thousand.
- B eight hundred thousand.
- C eight million.
- D eight hundred million.

OBJECTIVE: 1.2

GRADE 8: MATHEMATICS

GOAL: NUMERATION

SKILL: Recognize the word name for a standard numeral through billions.

STIMULUS ATTRIBUTES:

- A. **Format** a boxed number preceded by a statement such as: Choose the word name for this number.
- B. **Content** number with six to ten digits
- C. **Directions** N/A

RESPONSE ATTRIBUTES:

- A. **Format** four word names for numbers listed vertically in random order
- B. **Options** correct response: the word name for the stimulus number
distractors:
1. word names using digits from the stimulus in other place values
 2. digit names without place values (one, two, etc.)

SAMPLE ITEM:

1. Choose the word name for this number.

1,234,875

- A one billion, two hundred, eight hundred, seventy-five
- B twelve million, thirty-four thousand, seventy-five
- C twelve billion, thirty-four thousand, seventy-five
- D one million, two hundred thirty-four thousand, eight hundred seventy-five

OBJECTIVE: 1.3

GRADE 8: MATHEMATICS

GOAL: NUMERATION

SKILL: Recognize the standard numeral for the word name of a whole number through billions.

STIMULUS ATTRIBUTES:

- A. **Format** a boxed word name for a number preceded by a statement such as: Choose the number for this word name.
- B. **Content** a word name for a number having seven to ten digits
- C. **Directions** N/A

RESPONSE ATTRIBUTES:

- A. **Format** four seven- to ten-digit numbers with commas aligned listed vertically in order of increasing or decreasing magnitude
- B. **Content** correct response: the number for the stimulus word name
distractors: stimulus numbers in other place values

SAMPLE ITEM:

1. Choose the number for this word name.

one million, four hundred eighty-nine thousand, sixty-five

- A 1,498,065
- B 1,489,065
- C 1,489,650
- D 10,498,065

OBJECTIVE: 1.4

GRADE 8: MATHEMATICS

GOAL: NUMERATION

SKILL: Round whole numbers to the nearest tens, hundreds, ..., through billions.

STIMULUS ATTRIBUTES:

- A. Format a statement such as: Round (number) to the nearest (tens, etc.).
- B. Content 1. number with six to nine digits (with commas)
2. deciding digit NOT 5
- C. Directions N/A

RESPONSE ATTRIBUTES:

- A. Format four six- to nine-digit numbers listed vertically in order of increasing or decreasing magnitude
- B. Options correct response: the stimulus number rounded as requested
distractors:
1. stimulus number rounded to the wrong place
2. stimulus number rounded to correct place but other digits not replaced by zeros
3. stimulus number rounded at the correct place but down instead of up or vice versa

SAMPLE ITEM:

1. Round 4,866,541 to the nearest million.

- A 4,000,000
B 4,900,000
* C 5,000,000
D 5,866,541

OBJECTIVE: 1.5

GRADE 8: MATHEMATICS

GOAL: NUMERATION

SKILL: Identify place value in decimals through thousandths.

STIMULUS ATTRIBUTES:

- A. Format an incomplete sentence or direct question such as:
- Type 1* What digit in (decimal) is in the (tenths, hundredths, thousandths) place?
- Type 2* Which number has a (0 to 9) in the (tenths, hundredths, thousandths) place?
- B. Content
- Type 1* no digits repeated in the decimal
- Type 2* N/A
- C. Directions N/A

RESPONSE ATTRIBUTES:

- A. Format
- Type 1* four digits listed vertically in order of increasing or decreasing magnitude
- Type 2* four decimals with periods aligned listed vertically in order of increasing or decreasing magnitude
- B. Content
- Type 1* N/A
- Type 2* no digits repeated in each decimal
- C. Options
- Type 1* correct response: the digit requested in the stimulus
distractors:
a. other digits from the stimulus
b. any other digit
- Type 2* correct response: the decimal requested in the stimulus
distractors:
a. other arrangements of the digits from the stimulus
b. other decimals

SAMPLE ITEM: *Type 1*

1. What digit 542.789 is in the hundredths place?

- A 4
- B 5
- C 7
- D 8

SAMPLE ITEM: *Type 2*

2. Which number has as 7 in the tenths place?

- A 37.549
- B 53.749
- C 73.459
- D 94.87

OBJECTIVE: 1.6

GRADE 8: MATHEMATICS

GOAL: NUMERATION

SKILL: Round decimals to the nearest whole number, tenth, or hundredth.

STIMULUS ATTRIBUTES:

A. Format a statement such as: Round (decimal) to the nearest (whole number, tenth, hundredth); or an incomplete statement such as: (decimal) rounded to the nearest (whole number, tenth, hundredth, is _____.)

B. Content

1. whole numbers less than 10
2. no more than three digits to the right of the decimal point
3. no digit repeated
4. deciding digit NOT 5

C. Directions N/A

RESPONSE ATTRIBUTES:

A. Format four decimals (including whole numbers less than 10) listed vertically in order of increasing or decreasing magnitude (with periods aligned)

B. Options correct response: the stimulus number rounded as requested
distractors:
a. stimulus number rounded to the wrong place
b. stimulus number rounded up instead of down or vice versa

SAMPLE ITEMS:

1. Round 6.891 to the nearest tenth.

- A 6.0
- B 6.8
- C 6.9
- D 7.0

2. 7.8434 rounded to the nearest whole number is _____.

- A 8
- B 7.84
- C 7.8
- D 7

OBJECTIVE: 1.7

GRADE 8: MATHEMATICS

GOAL: NUMERATION

SKILL: Recognize the word name of a decimal through thousandths.

STIMULUS ATTRIBUTES:

- A. Format a boxed number preceded by a statement such as: Choose the word name for the number in the box below; or a direct question such as: What is the word name for (decimal)?
- B. Content
1. no more than three digits to the right of the decimal point
 2. a decimal or mixed decimal less than 100
- C. Directions N/A

RESPONSE ATTRIBUTES:

- A. Format four word names for decimals listed vertically in random order
- B. Options
- correct response: the word name for the stimulus decimal
- distractors:
- a. using hundred instead of hundredths, etc.
 - b. using a hyphen to indicate the decimal point
 - c. the name for each digit with omission or incorrect placement of the decimal point

SAMPLE ITEMS:

1. Choose the word name for the number in the box below.

5.467

- A five-four hundred, sixty-seven
- B five thousand, four hundred sixty-seven
- * C five and four hundred sixty-seven thousandths
- D five and four thousand sixty-seven hundreds

2. What is the word name for 5.467?

- A five-four hundred, sixty-seven
- B five thousand, four hundred sixty-seven
- * C five and four hundred sixty-seven thousandths
- D five and four thousand sixty-seven hundreds

OBJECTIVE: 1.8

GRADE 8: MATHEMATICS

GOAL: NUMERATION

SKILL: Recognize the standard form of a decimal through thousandths, given the word name.

STIMULUS ATTRIBUTES:

- A. Format a boxed word name for a decimal preceded by a statement such as: Choose the number for the word name in the box; or a direct question such as: Which number means the same as (word name)?
- B. Content
1. decimals to thousandths
 2. both decimals and mixed decimals less than 100
- C. Directions N/A

RESPONSE ATTRIBUTES:

- A. Format four decimals with decimal points aligned listed vertically in order of increasing or decreasing magnitude
- B. Options
- correct response: the decimal for the word name in the stimulus
- distractors:
1. decimals with the decimal points incorrectly placed
 2. other incorrect responses (e.g., use of a comma in place of a decimal point)

SAMPLE ITEMS:

1. Choose the number for the word name in the box.

twenty-five and three hundredths

- A .2530
B 25.300
C 25,300
• D 25.03

2. Which number means the same as twenty-five and three hundredths?

- A .2530
B 25,300
C 25.300
• D 25.03

OBJECTIVE: 1.9

GRADE 8: MATHEMATICS

GOAL: NUMERATION

SKILL: Compare two decimals to thousandths (include some whole numbers).

STIMULUS ATTRIBUTES:

A. Format

Type 1 a direct question such as: Which is true?

Type 2 a direct question such as: Which is (larger than, smaller than, equal to) (decimal)?

B. Content

Type 1 N/A

Type 2 a. decimal with or without a whole number less than 100
b. up to three digits to the right of the decimal

C. Directions N/A

RESPONSE ATTRIBUTES:

A. Format

Type 1 four statements of equality or inequality with decimal points aligned listed vertically in random order

Type 2 four numbers with decimal points aligned listed vertically in random order

B. Options

Type 1 correct response: a true statement of equality or inequality
distractors: false statements of equality or inequality

Type 2 correct response: the number requested in the stimulus
distractors: other numbers which are larger than the stimulus number

SAMPLE ITEM: *Type 1*

1. Which is true?

- A $12.06 < 11.987$
- B $28.3 = 2.83$
- C $45.09 > 45.9$
- *D $5.67 > .998$

SAMPLE ITEM: *Type 2*

2. Which is smaller than .567?

- * A .411
- B .713
- C .6
- D 2.411

OBJECTIVE: 1.10

GRADE 8: MATHEMATICS

GOAL: NUMERATION

SKILL: Compare two fractions with unlike denominators 10 or less.

STIMULUS ATTRIBUTES:

- A. **Format** a direct question such as: Which is (larger than, smaller than, equal to) (fraction)?
- B. **Content** denominator of fraction 10 or less
- C. **Directions** N/A

RESPONSE ATTRIBUTES:

- A. **Format** four fractions with denominators of ten or less (unlike the stimulus denominator) listed vertically in random order
- B. **Options** correct response: the fraction requested in the stimulus
distractors: other fractions

SAMPLE ITEMS:

1. Which is larger than $\frac{2}{3}$?

- A $\frac{1}{4}$
- B $\frac{2}{7}$
- C $\frac{2}{8}$
- * D $\frac{3}{4}$

3. Which is equal to $\frac{2}{3}$?

- A $\frac{4}{9}$
- B $\frac{5}{8}$
- * C $\frac{4}{6}$
- D $\frac{3}{7}$

2. Which is smaller than $\frac{1}{2}$?

- A $\frac{4}{8}$
- * B $\frac{1}{3}$
- C $\frac{3}{4}$
- D $\frac{5}{7}$

OBJECTIVE: 2.1

GRADE 8: MATHEMATICS

GOAL: WHOLE NUMBERS

SKILL: Add three or more six-digit whole numbers.

STIMULUS ATTRIBUTES:

- A. Format an addition problem arranged vertically or horizontally ($X + Y =$) with an operational sign
- B. Content three or more six-digit numbers
- C. Directions N/A

RESPONSE ATTRIBUTES:

- A. Format four numbers with commas aligned listed vertically in order of increasing or decreasing magnitude
- B. Options correct response: the sum of the stimulus problem
distractors:
1. errors in regrouping in the two higher place values
 2. sum without regrouping
 3. (1, 10, 100, etc.) more or less than the sum

SAMPLE ITEMS:

1.
$$\begin{array}{r} 647,529 \\ 928,135 \\ + 345,678 \\ \hline \end{array}$$
- A 1,820,343
B 1,822,332
C 1,911,342
• D 1,921,342

2. $647,529 + 928,135 + 345,678 =$

- A 1,820,343
B 1,822,332
C 1,911,342
• D 1,921,342

OBJECTIVE: 2.2

GRADE 8: MATHEMATICS

GOAL: WHOLE NUMBERS

SKILL: Subtract two six-digit whole numbers.

STIMULUS ATTRIBUTES:

- A. **Format** a subtraction problem arranged vertically or horizontally ($X - Y =$) with operational sign
- B. **Content** two six-digit whole numbers
- C. **Directions** N/A

RESPONSE ATTRIBUTES:

- A. **Format** four numbers listed vertically with commas aligned in order of increasing or decreasing magnitude
- B. **Options** correct response: the difference between the stimulus numbers
distractors:
1. sum of the stimulus numbers
2. incorrect regrouping
3. incorrect basic facts

SAMPLE ITEMS:

1.
$$\begin{array}{r} 450,291 \\ - 135,790 \\ \hline \end{array}$$

- A 214,501
• B 314,501
C 325,490
D 586,081

2. $450,291 - 135,790 =$

- A 214,501
• B 314,501
C 325,490
D 586,081

OBJECTIVE: 2.3

GRADE 8: MATHEMATICS

GOAL: WHOLE NUMBERS

SKILL: Multiply up to a three-digit whole number by a three-digit whole number.

STIMULUS ATTRIBUTES:

- A. Format a multiplication problem arranged vertically or horizontally ($X \times Y =$) with operational sign
- B. Content one three-digit whole number and another of no more than three digits
- C. Directions N/A

RESPONSE ATTRIBUTES:

- A. Format four numbers with commas aligned listed vertically in order of increasing or decreasing magnitude
- B. Options correct response: the product of the stimulus problem
distractors:
1. error in regrouping
 2. misaligning the partial products
 3. using zero times a number equals that number
 4. multiplying by only one of the digits
 5. incorrect multiplication facts

SAMPLE ITEMS:

1.
$$\begin{array}{r} 408 \\ \times 28 \\ \hline \end{array}$$

A 3,264
B 4,080
• C 11,424
D 11,704

2. $408 \times 28 =$

A 3,264
B 4,080
• C 11,424
D 11,704

OBJECTIVE: 2.4

GRADE 8: MATHEMATICS

GOAL: WHOLE NUMBERS

SKILL: Divide up to a five-digit whole number by a two-digit whole number.

STIMULUS ATTRIBUTES:

- A. Format** a division problem with an operational sign
- B. Content**
1. a five-digit whole number dividend
 2. a two-digit whole number divisor
 3. may have zero in dividend
- C. Directions** N/A

RESPONSE ATTRIBUTES:

- A. Format** four numbers with or without a remainder (R's aligned) in order of increasing or decreasing magnitude
- B. Options**
- correct response: the quotient of the stimulus problem
- distractors:
1. ignoring zero in the dividend
 2. a partial quotient
 3. omitting zero in the quotient
 4. using remainder as a digit of the quotient
 5. a decimal instead of a remainder

SAMPLE ITEMS:

1. $17 \overline{) 23,456}$

- A 137 R16
B 137.16
C 1037 R16
• D 1379 R13

2. $23,456 \div 17 =$

- A 137 R16
B 137.16
C 1037 R16
• D 1379 R13

OBJECTIVE: 2.5

GRADE 8: MATHEMATICS

GOAL: WHOLE NUMBERS

SKILL: Estimate answers to whole number computation problems.

STIMULUS ATTRIBUTES:

- A. Format** a subtraction, multiplication, or addition problem arranged vertically or horizontally ($YY = ZZ =$)
- B. Content**
1. two whole numbers with same number of digits (no more than six digits) to be added or subtracted
 2. two two-digit numbers to be multiplied
- C. Directions** Choose the correct estimate for question ().

RESPONSE ATTRIBUTES:

- A. Format** four numbers with commas aligned listed vertically in order of increasing or decreasing magnitude
- B. Options**
- correct response: the estimate requested in the stimulus
- distractors:
1. incorrect rounding
 2. basic fact errors

SAMPLE ITEMS:

Choose the correct estimate for questions 1 through 3.

1.
$$\begin{array}{r} 6,759 \\ + 3,657 \\ \hline \end{array}$$

- A 9,000
B 10,000
• C 10,500
D 11,000

3.
$$\begin{array}{r} 52 \\ \times 12 \\ \hline \end{array}$$

- A 100
• B 500
C 600
D 800

2. $4,632 - 3,654 =$

- A 700
B 750
C 800
• D 1,000

OBJECTIVE: 2.6

GRADE 8: MATHEMATICS

GOAL: WHOLE NUMBERS

SKILL: Solve reading problems involving one or two operations with whole numbers.

STIMULUS ATTRIBUTES:

- A. Format** a word problem describing a situation
- B. Content**
1. no more than three-digit numbers in addition or subtraction problems
 2. no more than two-digit numbers in multiplication or division problems
 3. no more than two operations required
 4. numerals, not word names, used
- C. Directions** Choose the correct answer for question ().

RESPONSE ATTRIBUTES:

- A. Format** four numbers with numbers aligned listed vertically in order of increasing or decreasing magnitude
- B. Options**
- correct response: the solution to the stimulus problem
- distractors:
1. using an incorrect operation
 2. using one operation when two are required
 3. incorrect computation

SAMPLE ITEM:

Choose the correct answer for question 1.

1. There are 24 ties in each box. How many ties are there in 18 boxes?

- A $1\frac{1}{3}$
B 42
C 216
• D 432

OBJECTIVE: 2.7

GRADE 8: MATHEMATICS

GOAL: WHOLE NUMBERS

SKILL: Find the greatest common factor of two or three whole numbers with no more than two digits.

STIMULUS ATTRIBUTES:

- A. **Format** a direct question such as: Which is the greatest common factor of (number) and (number)? or an incomplete statement such as: The greatest common factor of (number) and (number) is _____.
- B. **Content** whole numbers with no more than two digits
- C. **Directions** N/A

RESPONSE ATTRIBUTES:

- A. **Format** four numbers with digits aligned listed vertically in order of increasing or decreasing magnitude
- B. **Options** correct response: the greatest common factor of the stimulus numbers
distractors:
1. product of stimulus numbers
 2. a common factor that is not the greatest
 3. sum of stimulus numbers
 4. difference between stimulus numbers

SAMPLE ITEMS:

1. Which is the greatest common factor of 6 and 8?

- A 2
- B 24
- C 48
- D 192

2. The greatest common factor of 6 and 8 is _____.

- A 2
- B 24
- C 48
- D 192

OBJECTIVE: 2.8

GRADE 8: MATHEMATICS

GOAL: WHOLE NUMBERS

SKILL: Find the least common multiple of two or three whole numbers with no more than two digits.

STIMULUS ATTRIBUTES:

- A. Format** a direct question such as: Which is the least common multiple of (number) and (number)?
- B. Content** whole numbers with no more than two digits
- C. Directions** N/A

RESPONSE ATTRIBUTES:

- A. Format** four numbers with numbers aligned listed vertically in order of increasing or decreasing magnitude
- B. Options** correct response: the least common multiple of the stimulus numbers
distractors:
1. product of stimulus numbers (if not correct)
 2. a common factor of the stimulus numbers
 3. greatest common factor

SAMPLE ITEM:

1. What is the least common multiple of 6 and 9?

- A 1
- B 3
- C 18
- D 54

OBJECTIVE: 3.1

GRADE 8: MATHEMATICS

GOAL: RATIONAL NUMBERS

SKILL: Change a fraction to an equivalent fraction with a given denominator which does not exceed two digits.

STIMULUS ATTRIBUTES:

- A. Format** an incomplete problem with two fractions having an equal (=) sign between them and one missing numerator marked by a blank.
- B. Content**
1. denominators less than 100
 2. one denominator a multiple of the other
 3. proper fractions
- C. Directions** Find the missing numerator.

RESPONSE ATTRIBUTES:

- A. Format** four numbers (or integers) with numbers aligned listed vertically in order of increasing or decreasing magnitude
- B. Options**
- correct response: the numerator which makes the stimulus problem correct
- distractors:
1. stimulus numerator
 2. quotient of the denominators
 3. quotient of the numerator and denominator
 4. errors using other incorrect operations

SAMPLE ITEM:

Find the missing numerator.

1. $\frac{5}{8} = \frac{\quad}{16}$

- A 2
• B 10
C 13
D 40

OBJECTIVE: 3.2

GRADE 8: MATHEMATICS

GOAL: RATIONAL NUMBERS

SKILL: Add two or more fractions with unlike denominators that do not exceed two digits, stating the sum in the simplest form.

STIMULUS ATTRIBUTES:

- A. Format** an addition problem of two proper fractions placed vertically or horizontally ($\frac{x}{y} + \frac{w}{z} =$) with operational sign.
- B. Content** 1. fractions with unlike denominators
2. sum less than one
- C. Directions** Add. Simplify the answer if possible.

RESPONSE ATTRIBUTES:

- A. Format** four fractions listed vertically in random order
- B. Options** correct response: the sum of the stimulus problem expressed in simplest form
distractors:
1. numerators and denominators added
2. unsimplified form of the correct response
3. numerators added using the least common denominator
4. numerators subtracted using the least common denominator

SAMPLE ITEMS:

1. Add. Simplify the answer if possible.

$$\begin{array}{r} \frac{2}{3} \\ + \frac{1}{4} \\ \hline \end{array}$$

- A $\frac{2}{7}$
B $\frac{3}{7}$
C $\frac{2}{12}$
D $\frac{11}{12}$

2. Add. Simplify the answer if possible.

$$\frac{2}{3} + \frac{1}{4} =$$

- A $\frac{2}{7}$
B $\frac{3}{7}$
C $\frac{2}{12}$
D $\frac{11}{12}$

OBJECTIVE: 3.3

GRADE 8: MATHEMATICS

GOAL: RATIONAL NUMBERS

SKILL: Subtract two fractions with unlike denominators that do not exceed two digits, stating the sum in simplest form.

STIMULUS ATTRIBUTES:

- A. Format** a subtraction problem of two proper fractions placed vertically or horizontally ($\frac{x}{y} - \frac{w}{z} =$) with operational sign
- B. Content**
1. fractions with unlike denominators
 2. may include fractions that need to be reduced
- C. Directions** Subtract. Simplify the answer if possible.

RESPONSE ATTRIBUTES:

- A. Format** four fractions listed vertically in random order
- B. Options**
- correct response: the difference between the stimulus fractions expressed in simplest form
- distractors:
1. numerators and/or denominators subtracted
 2. unsimplified form of the correct response
 3. numerators subtracted but using the least common denominator

SAMPLE ITEMS:

1. Subtract. Simplify the answer if possible.

$$\frac{7}{8} - \frac{5}{6}$$

- A $\frac{2}{2}$
- B $\frac{1}{24}$
- C $\frac{2}{24}$
- D $\frac{2}{48}$

2. Subtract. Simplify the answer if possible.

$$\frac{5}{12} - \frac{1}{8} =$$

- A $\frac{3}{6}$
- B $\frac{4}{6}$
- C $\frac{3}{12}$
- D $\frac{4}{12}$

OBJECTIVE: 3.4

GRADE 8: MATHEMATICS

GOAL: RATIONAL NUMBERS

SKILL: Multiply two fractions with denominators that do not exceed two digits, stating the product in simplest form.

STIMULUS ATTRIBUTES:

- A. **Format** a multiplication problem of two proper fractions placed horizontally ($\frac{x}{y} \times \frac{w}{z} =$) with operational sign
- B. **Content** 1. denominators not to exceed two digits
2. may include a fraction that needs to be reduced or simplified
- C. **Directions** Multiply. Simplify the answer if possible.

RESPONSE ATTRIBUTES:

- A. **Format** four fractions listed vertically in random order
- B. **Options** correct response: the product of the stimulus problem expressed in simplest form
distractors:
1. unsimplified form of the correct response
 2. quotient instead of product
 3. product of the numerator over the common denominator
 4. product of the numerator over the sum of the denominators

SAMPLE ITEMS:

Multiply. Simplify the answer if possible.

1. $\frac{2}{3} \times \frac{3}{8}$

A $\frac{5}{24}$

B $\frac{1}{4}$

C $\frac{5}{11}$

D $\frac{6}{11}$

2. $\frac{9}{10} \times \frac{5}{8}$

A $\frac{3}{4}$

B $\frac{45}{60}$

C $\frac{52}{30}$

D $\frac{9}{12}$

OBJECTIVE: 3.5

GRADE 8: MATHEMATICS

GOAL: RATIONAL NUMBERS

SKILL: Change a decimal (through thousandths) to a common fraction (not necessarily in simplest form).

STIMULUS ATTRIBUTES:

- A. **Format** a statement such as: Change (decimal) to a fraction.
- B. **Content** decimal not to exceed thousandths
- C. **Directions** N/A

RESPONSE ATTRIBUTES:

- A. **Format** four numbers with digits aligned listed vertically in random order
- B. **Content** at least three fractions not included
- C. **Options** correct response: the stimulus decimal written as a fraction
distractors:
1. correct numerator with incorrect denominators
2. numerator of the correct response

SAMPLE ITEM:

1. Change .73 to a fraction.

- A $\frac{.73}{100}$
- B $\frac{73}{10}$
- C $\frac{73}{100}$
- D $1\frac{73}{100}$

OBJECTIVE: 3.6

GRADE 8: MATHEMATICS

GOAL: RATIONAL NUMBERS

SKILL: Change a common fraction to a decimal (denominators not to exceed 100).

STIMULUS ATTRIBUTES:

- A. Format a direct question such as: Which means the same as (fraction); or a statement such as: Change (fraction) to a decimal
- B. Content proper fractions with denominators of 2, 4, 5, 10, 20, 25, 50 or 100.
- C. Directions N/A

RESPONSE ATTRIBUTES:

- A. Format four decimals with decimal points aligned listed vertically in random order
- B. Options correct response: the decimal for the stimulus fraction
distractors:
1. correct response with misplaced or omitted decimal point
 2. decimal formed by writing the denominator next to the numerator
 3. incorrect placement of zero

SAMPLE ITEMS:

1. Which means the same as $\frac{1}{4}$?

- A 14
B 2.5
• C .25
D .14

2. Change $\frac{4}{5}$ to a decimal.

- A .08
B .45
• C .8
D 45

OBJECTIVE: 3.7

GRADE 8: MATHEMATICS

GOAL: RATIONAL NUMBERS

SKILL: Add two or more decimals through thousandths. (Include some whole numbers.)

STIMULUS ATTRIBUTES:

- A. Format** an addition problem placed vertically or horizontally ($X.XX + Y.Y =$) with operational sign
- B. Content**
1. decimals through thousandths
 2. whole numbers less than 100
 3. two or more addends
- C. Directions** N/A

RESPONSE ATTRIBUTES:

- A. Format** four decimals with decimal points aligned listed vertically in order of increasing or decreasing magnitude
- B. Options**
- correct response: the sum of the stimulus problem
- distractors:
1. decimal point misplaced using the multiplication algorithm
 2. digits aligned without regard to decimal point
 3. failure to carry from the fractional component to the whole number component,

$$\begin{array}{r} \text{Ex. } 3.7 \\ + 1.8 \\ \hline 4.15 \end{array}$$

SAMPLE ITEMS:

1.
$$\begin{array}{r} 3.7 \\ + 1.8 \\ \hline \end{array}$$

A 4.15
B 4.5
• C 5.5
D 9.1

2. $3.7 + 1.8 =$

A .554
B 3.92
C 4.54
• D 5.5

OBJECTIVE: 3.8

GRADE 8: MATHEMATICS

GOAL: RATIONAL NUMBERS

SKILL: Subtract decimals through thousandths. (Include some with whole numbers.)

STIMULUS ATTRIBUTES:

- A. **Format** a subtraction problem placed vertically or horizontally (X. XX - .YY) with operational sign
- B. **Content** 1. decimals through thousandths
2. whole numbers less than 100
- C. **Directions** N/A

RESPONSE ATTRIBUTES:

- A. **Format** four decimals with decimal points aligned listed vertically in order of increasing or decreasing magnitude
- B. **Options** correct response: the difference of the stimulus problem
distractors:
1. decimal point misplaced using the multiplication algorithm
2. bringing down the digit from the subtrahend when no digit is shown in the minuend.

Example:

$$\begin{array}{r} 85 \\ - 6.79 \\ \hline 1.89 \end{array}$$

SAMPLE ITEMS:

1.
$$\begin{array}{r} 8.5 \\ - 6.79 \\ \hline \end{array}$$

- A .171
• B 1.71
C 1.89
D 2.29

2. $5.78 - 4 = (\quad)$

- A 1.78
B 5.38
C 5.82
D 9.78

OBJECTIVE: 3.9

GRADE 8: MATHEMATICS

GOAL: RATIONAL NUMBERS

SKILL: Multiply a decimal with no more than three digits by a decimal with no more than three digits.

STIMULUS ATTRIBUTES:

- A. Format a multiplication problem placed vertically or horizontally ($X \times Y$) with an operational sign
- B. Content
1. decimals with no more than three digits
 2. may include whole numbers
- C. Directions N/A

RESPONSE ATTRIBUTES:

- A. Format four decimals with decimal points aligned placed vertically in order of increasing or decreasing magnitude
- B. Options
- correct response: the product of the stimulus problem
- distractors:
1. correct digits with incorrectly placed decimal points
 2. decimal placed by addition algorithm

SAMPLE ITEMS:

1.

$$\begin{array}{r} 5.02 \\ \times .001 \\ \hline \end{array}$$

- A .00502
B .05002
C 5.002
D 50.2

2. $5.02 \times .001 =$

- A .00502
B .05002
C 5.002
D 50.2

OBJECTIVE: 3.10

GRADE 8: MATHEMATICS

GOAL: RATIONAL NUMBERS

SKILL: Divide a decimal by a two-digit whole number.

STIMULUS ATTRIBUTES:

- A. Format a division problem placed vertically or horizontally ($X \div Y = \quad$) with an operational sign
- B. Content
1. divisor a two-digit whole number
 2. dividend a decimal in tenths, hundredths, or thousandths
 3. no remainder required
 4. dividend may have whole number
- C. Directions N/A

RESPONSE ATTRIBUTES:

- A. Format four decimals and/or whole numbers with decimal points aligned listed vertically in order of increasing or decreasing magnitude
- B. Options
- correct response: the quotient of the stimulus problem
- distractors:
1. incorrectly placed decimal point
 2. incorrectly placed zero

SAMPLE ITEMS:

1. $25 \overline{) .5}$

- A .02
- B .2
- C 2
- D 20

2. $.5 \div 25 =$

- A .02
- B 2
- C 2
- D 20

OBJECTIVE: 3.11

GRADE 8: MATHEMATICS

GOAL: RATIONAL NUMBERS

SKILL: Solve consumer type reading problems which require the use of decimals (no division).

STIMULUS ATTRIBUTES:

- | | |
|---------------|--|
| A. Format | a reading problem of no more than 50 words |
| B. Content | 1. consumer oriented problem
2. no division required
3. computations limited to one or two steps
4. may include money |
| C. Directions | N/A |

RESPONSE ATTRIBUTES:

- | | |
|------------|--|
| A. Format | four decimals with decimal points aligned listed vertically in order of increasing or decreasing magnitude |
| B. Options | <u>correct response:</u> solution to the stimulus problem
<u>distractors:</u>
1. incorrectly placed decimal point
2. incorrect operation
3. partially worked problem |

SAMPLE ITEM:

1. Sue's mother gave her a \$20.00 bill to go shopping. She spent \$13.71. How much money did she have left?
- A \$ 6.29
 - B \$ 7.29
 - C \$13.61
 - D \$33.71

OBJECTIVE: 3.12

GRADE 8: MATHEMATICS

GOAL: RATIONAL NUMBERS

SKILL: Write a percent, exclusive of those having decimals or fractional parts, as a fraction.

STIMULUS ATTRIBUTES:

- A. Format a statement such as: Change (percent) to a fraction.
- B. Content
1. percent in simplest form as a fraction
 2. whole number percent less than 100%
- C. Directions N/A

RESPONSE ATTRIBUTES:

- A. Format four fractions listed vertically in random order
- B. Options
- correct response: the fraction requested in the stimulus
- distractors:
1. other multiples of 10 in the denominator
 2. decimal point in front of the numerator
 3. other fractions (no mixed numbers)

SAMPLE ITEMS:

1. Change 33% to a fraction.

- A $\frac{33}{10}$
- B $\frac{33}{100}$
- C $\frac{33}{1000}$
- D $\frac{33}{100}$

OBJECTIVE: 3.13

GRADE 8: MATHEMATICS

GOAL: RATIONAL NUMBERS

SKILL: Write a percent, exclusive of those having decimals or fractional parts, as a decimal.

STIMULUS ATTRIBUTES:

- A. **Format** a statement such as: Change (percent) to a decimal.
- B. **Content** whole number percents less than 100%
- C. **Directions** N/A

RESPONSE ATTRIBUTES:

- A. **Format** four decimals with decimal points aligned listed vertically in random order
- B. **Options** correct response the decimal requested in the stimulus
distractors decimal points and/or zeros incorrectly placed

SAMPLE ITEM:

1. Change 45% to a decimal.

- A 45
B 4.5
• C .45
D .045

OBJECTIVE: 3.14

GRADE 8: MATHEMATICS

GOAL: RATIONAL NUMBERS

SKILL: Write a decimal as a percent.

STIMULUS ATTRIBUTES:

- A. **Format** a statement such as: Change (decimal) to a percent
- B. **Content** decimals limited to tenths and hundredths
- C. **Directions** N/A

RESPONSE ATTRIBUTES:

- A. **Format** four numbers (percentages, decimals, or integers) with decimal points aligned listed vertically in random order
- B. **Options** correct response: the percent requested in the stimulus
distractors:
1. stimulus with % sign
 2. decimal point misplaced

SAMPLE ITEMS:

1. Change .34 to a percent.

- A .034
B .34%
• C 34%
D 3.4%

OBJECTIVE: 3.15

GRADE 8: MATHEMATICS

GOAL: RATIONAL NUMBERS

SKILL: Solve consumer type reading problems that require finding the percent of a number.

STIMULUS ATTRIBUTES:

- A. Format** a reading problem with no more than 50 words
- B. Content**
1. percent a whole number less than 100%
 2. other factor a whole number less than 1,000
 3. one step problem
 4. rounding not required in multiplication problem
 5. problem either dealing with money or not dealing with money

C. Directions N/A

RESPONSE ATTRIBUTES:

- A. Format** four decimals with decimal points aligned listed vertically in order of increasing or decreasing magnitude
- B. Options**
- correct response: the decimal requested in the stimulus problem
- distractors:
1. decimal point incorrectly placed
 2. incorrect operation

SAMPLE ITEMS:

1. It is customary to tip a waitress 15% of the price of a dinner. How much tip should be left if the bill is \$15.00?

- A \$.15
B \$.225
• C \$ 2.25
D \$14.85

2. Robin's Record and Tape Shop has an inventory of 800 tapes. She must sell 15% of the tapes next month. How many tapes must she sell?

- A 1 20
B 12.00
• C 120.00
D 1200.00

OBJECTIVE: 4.1

GRADE 8: MATHEMATICS

GOAL: MEASUREMENT

SKILL: Select a reasonable metric measure for length, distance, capacity, or mass (using metric units: meter, centimeter, millimeter, kilogram).

STIMULUS ATTRIBUTES:

- A. Format a direct question or an incomplete statement requesting a reasonable metric measure
- B. Content
1. practical object measured
 2. metric measures: meter, centimeter, millimeter, kilogram, liter
- C. Directions N/A

RESPONSE ATTRIBUTES:

- A. Format four word names for metric measurement listed vertically in random order
- B. Options
- correct response: the measurement requested in the stimulus
- distractors:
1. other metric measurements of the same type with different prefixes
 2. other metric measurements from the content list

SAMPLE ITEMS:

1. The height of a man would MOST likely be measured in:
 - A liters.
 - B meters.
 - C kilograms.
 - D kilometers.
2. Which metric unit would MOST likely be used to fill the gasoline tank of a car?
 - A liters
 - B meters
 - C kilograms
 - D kilometers
3. Which would MOST likely be used to measure the distance between two towns?
 - A grams
 - B meters
 - C kilometers
 - D centimeters

OBJECTIVE: 4.2

GRADE 8: MATHEMATICS

GOAL: MEASUREMENT

SKILL: Select a reasonable customary measure for length or distance, liquid volume or capacity or mass (using measures: Inch, foot, yard, mile, ounce, ton, pint, gallon, or quart).

STIMULUS ATTRIBUTES:

- A. **Format** an incomplete statement or direct question requesting a reasonable customary measure
- B. **Content** 1. a practical object measured
2. customary measure from the skill list
- C. **Directions** N/A

RESPONSE ATTRIBUTES:

- A. **Format** four word names for customary measurements listed vertically in random order
- B. **Options** correct response: the measurement requested in the stimulus
distractors: other measurements from the skill list

SAMPLE ITEMS:

1. A man's weight would MOST likely be measured in:
 - A tons.
 - B feet.
 - C ounces.
 - D pounds.
2. Which would MOST likely be used to measure the length of a pencil?
 - A pints
 - B yards
 - C inches
 - D pounds

OBJECTIVE: 4.3

GRADE 8: MATHEMATICS

GOAL: MEASUREMENT

SKILL: Convert from one unit of measure to another within the same system.

STIMULUS ATTRIBUTES:

- A. **Format** an incomplete statement or equation such as: _____ is the same as _____. or _____ equal (=)
- B. **Content** a fractional answer not required in customary system except for those involving time

RESPONSE ATTRIBUTES:

- A. **Format** four measurements using the same system of measurement as stimulus in order of increasing or decreasing magnitude
- B. **Options** correct response: the measurement requested in the stimulus
distractors: other measurements within the same system

SAMPLE ITEMS:

1. 75 minutes is the same as:

- A 1 hour.
- B 1 hour 15 minutes.
- C 1 hour 25 minutes.
- D 2 hours.

2. 3 feet =

- A 36 inches.
- B 6 yards.
- C 2 rods.
- D 1 mile.

OBJECTIVE: 4.4

GRADE 8: MATHEMATICS

GOAL: MEASUREMENT

SKILL: Determine the length of a line segment to the nearest tenth of a centimeter or eighth of an inch.

STIMULUS ATTRIBUTES:

A. Format

Type 1 a ruler calibrated in eighths and a line segment above the ruler preceded by a direct question such as: What is the length of the line segment to the nearest $\frac{1}{8}$ inch?

Type 2 a ruler calibrated in millimeters and a line segment above the ruler preceded by a direct question such as: What is the length of the line segment to the nearest tenth of a centimeter?

B. Content

Type 1 a. inches labeled on ruler
b. measures of even numbers of eighths not required

Type 2 a. centimeters labeled on ruler
b. measures of a fraction of a millimeter not required

RESPONSE ATTRIBUTES:

A. Format

four measurements in the same system as stimulus listed vertically in order of increasing or decreasing magnitude

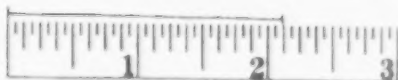
B. Options

Type 1 correct response: the measurement requested in the stimulus
distractors: measurements differing more than $\frac{1}{8}$ inch from the correct response in Type 1

Type 2 correct response: the measurement requested in the stimulus
distractors: measurements differing more than $\frac{1}{10}$ in Type 2

SAMPLE ITEM: Type 1

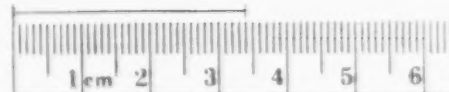
1. What is the length of this line segment to the nearest eighth of an inch?



- A $1\frac{1}{8}$
B $1\frac{5}{8}$
• C $2\frac{1}{8}$
D $2\frac{4}{8}$

SAMPLE ITEM: Type 2

2. What is the length of this line segment to the nearest tenth of a centimeter?



- A 3.2 cm
• B 3.4 cm
C 3.9 cm
D 4.3 cm

OBJECTIVE: 5.1

GRADE 8: MATHEMATICS

GOAL: GEOMETRY

SKILL: Identify circles, triangles, quadrilaterals and octagons.

STIMULUS ATTRIBUTES:

A. Format

Type 1 a geometric figure preceded by an incomplete statement such as: this figure is a: or direct question such as: What is the name of this figure?

Type 2 a direct question such as: How many sides does a _____ (octagon, etc.) have?

Type 3 a direct question such as: Which figure is a _____ (circle, etc.)?

B. Content quadrilaterals limited to all four sided figures (square, rectangle, trapezoid, rhombus and parallelograms).

RESPONSE ATTRIBUTES:

A. Format

Type 1 four names of geometric figures listed vertically in random order

Type 2 four numerals listed vertically in ascending or descending magnitude

Type 3 four geometric figures placed vertically or horizontally

B. Options

Type 1 correct response: the name of the geometric figure requested in the stimulus
distractors: names of other geometric figures from the skill list

Type 2 correct response: the number requested in the stimulus
distractors: other numbers

Type 3 correct response: the geometric figure requested in the stimulus
distractors: other geometric figures from the skill list

SAMPLE ITEM: *Type 1*

1. What is the name of this figure?



- A circle
- B octagon
- C square
- D triangle

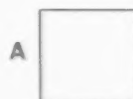
SAMPLE ITEM: *Type 2*

2. How many sides does a triangle have?

- A two
- B four
- C five
- D three

SAMPLE ITEM: *Type 3*

3. Which figure is a circle?



OBJECTIVE: 5.2

GRADE 8: MATHEMATICS

GOAL: GEOMETRY

SKILL: Find the perimeter of any polygon.

STIMULUS ATTRIBUTES:

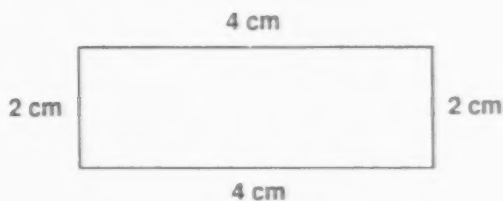
- A. **Format** a geometric figure with sides labeled in centimeters (cm) preceded by statements such as: Find the perimeter of this figure or a direct question such as: What is the perimeter of the figure?
- B. **Content**
1. figures limited to three or four sides
 2. lengths of sides limited to whole numbers

RESPONSE ATTRIBUTES:

- A. **Format** four measurements given in cm listed vertically in order of increasing or decreasing magnitude (with numerals aligned)
- B. **Options**
- correct response: the perimeter of the figure in the stimulus
- distractors:
- a. product of the lengths of the sides with cm^2
 - b. addition errors
 - c. sum of two sides of the stimulus figure

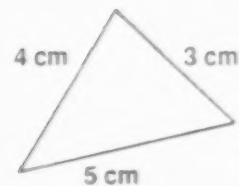
SAMPLE ITEMS:

1. What is the perimeter of the figure?



- A 7 cm
- B 12 cm
- C 19 cm
- D 60 cm

2. Find the perimeter of the figure.



- A 7 cm
- B 12 cm
- C 19 cm
- D 60 cm

OBJECTIVE: 5.3

GRADE 8: MATHEMATICS

GOAL: GEOMETRY

SKILL: Find the area of a square and rectangle.

STIMULUS ATTRIBUTES:

- A. Format a geometric figure with necessary length(s) labeled in centimeters, preceded by a statement such as: Find the area of this _____ (square, rectangle), or a direct question such as: What is the area of this _____ (square, rectangle)?
- B. Content
1. one side labeled on the square
 2. one length and one width labeled on the rectangle
 3. measurements in whole numbers

RESPONSE ATTRIBUTES:

- A. Format four measurements labeled cm, listed vertically in order of increasing or decreasing magnitude (with numerals aligned).
- B. Options
- correct response: the area of the stimulus figure
- distractors:
- a. sum of lengths
 - b. sum of two sides
 - c. correct response labeled cm NOT a distractor

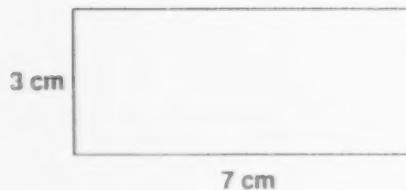
SAMPLE ITEMS:

1. What is the area of this square?



- A 20 cm²
- B 5 cm²
- C 25 cm²
- D 30 cm²

2. Find the area of this rectangle.



- A 10 cm²
- B 20 cm
- C 20 cm²
- D 21 cm²

OBJECTIVE: 6.1

GRADE 8: MATHEMATICS

GOAL: PROBABILITY AND STATISTICS

SKILL: Read and interpret charts, tables and graphs (bar, circle, line and pictograph).

STIMULUS ATTRIBUTES:

- A. Format** a chart, table or graph followed by a direct question requesting information from the chart, table or graph
- B. Content**
1. table limited to five vertical and five horizontal entries
 2. vertical bar graph limited to five bars
 3. vocabulary limited to sixth grade or below
- C. Directions** Use the (chart, table, graph) to answer question _____.

RESPONSE ATTRIBUTES:

- A. Format** four responses from the chart, table or graph listed vertically in random order
- B. Options** correct response: the information requested in the stimulus
distractors: other items of similar information from the stimulus chart, table or graph

SAMPLE ITEMS:

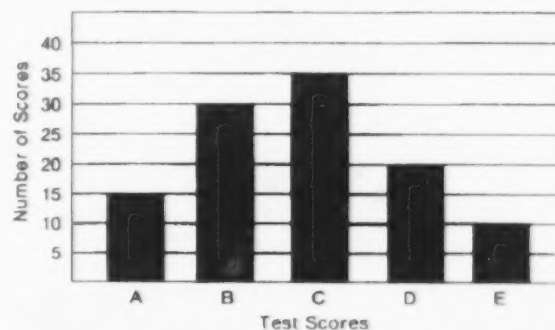
Use the table to answer question 1.

ITEM	Price per Kilogram		
	Store A	Store B	Store C
Oranges	\$.90	\$.94	\$.88
Peppers	\$.89	\$.85	\$.90
Cheese	\$4.78	\$5.09	\$5.05
Pork Chops	\$5.69	\$5.63	\$5.49

1. At which store would pork chops cost the LEAST?

- A Store A
B Store B
• C Store C
D cannot tell

Use the graph to answer question 2.



2. Which grade was made MOST frequently?

- A A
B B
• C C
D D

OBJECTIVE: 7.1

GRADE 8: MATHEMATICS

GOAL: INTEGERS

SKILL: Compare and order a set of integers.

STIMULUS ATTRIBUTES:

A. Format

Type 1 a direct question such as: Which is the ____ (largest, smallest) value?

Type 2 a direct question such as: Which list of numbers is from SMALLEST to LARGEST?

RESPONSE ATTRIBUTES:

A. Format

Type 1 positive numbers, negative numbers and zero listed vertically in random order

Type 2 four horizontal lists of no more than seven integers listed vertically in random order

B. Content whole numbers and/or their opposites no greater than 20 nor less than -20

C. Options

Type 1 correct response: the value requested in the stimulus
distractors: other values

Type 2 correct response: the list of numbers requested in the stimulus
distractors:
1. using negative integer whose absolute value is > the positive responses
2. integers listed from largest to smallest

SAMPLE ITEM: *Type 1*

1. Which is the LARGEST value?

- A -19
- B 0
- C -8
- D 7

2. Which is the SMALLEST value?

- A -15
- B 9
- C 0
- D -11

SAMPLE ITEM: *Type 2*

3. Which list of numbers is from SMALLEST to LARGEST?

- A 0, 1, 2, -4, -5, 6, 7
- B -1, -2, -3, 0, 1, 2, 3
- C -3, -2, -1, 0, 1, 2, 3
- D 5, 4, -3, -2, -1, 0

END

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